IBM Operating System/2 Extended Edition Version 1.2

ASCII Terminal Emulator - VT100
H2 - B - 3270 Emulator
Financial Transaction Processor
H1 - A - 3270 Emulator
Austin PROFS Main Menu
Press one of the following PF keys.
PF1 CALENDARS Process calendars
PF2 OPEN the MAIL
PF3 TELEPHONE DIRECTORIES
PF4 NOTES Process notes, messages
PF5 MAINTAIN all my NOTELOGS
PF6 CONTROL NICKNAMES & DISTRIBUTION
PF7 Local TOOLS Menu
PF8 Local INFORMATION Menu
PF10 MAIN MENU 2
** MENU 1 **
PF11 ADD an Automatic REMINDER
5664-389 (C) Copyright IBM Corp. 1983, 1987
HELP DESK 3-7000, PROFS ADMINISTRATOR (SYSADMIN)
DOS
Communications Manager
File Transfer
3270 Terminal Emulation
LAN Requester
Query Manager

OS/2 Communications Manager supports several different communications sessions concurrently.

Multitasking power for data and communications management is here today

Relational data base management, concurrent communications sessions, local area network support—you have them all with IBM Operating System/2™ Extended Edition Version 1.2. And now OS/2® makes it easier to develop the applications you need, too.

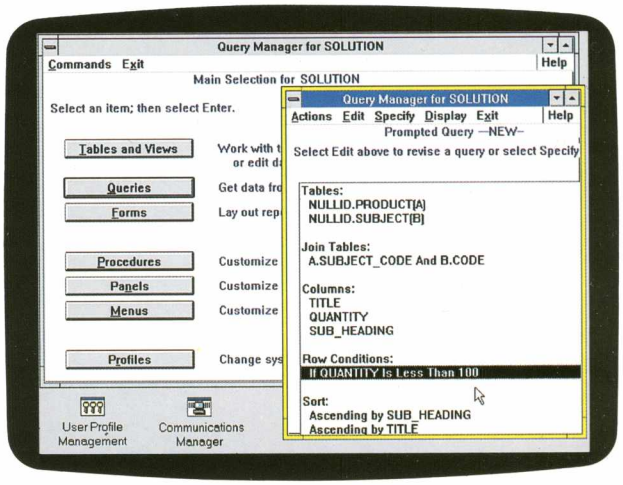
Designed to help you manage information with accuracy—and move it with ease—OS/2 EE builds on the multitasking power and large memory addressability of OS/2 Standard Edition. The result: It lets you tap the power of your 80286, 80386™ and i486™ processors to handle even the most demanding applications. And thanks to its menu-driven Basic Configuration Services, OS/2 EE is easier than ever to install, so you can start using it sooner.

For example, with Extended Edition's Communications Manager, you can maintain multiple communications sessions—even while you continue to run other applications. And with the Extended Edition's Database Manager, you get a full-feature relational data base that helps you maximize your information resources.

But you don't have to be an expert to take advantage of these powerful information management and movement tools. That's because both Database Manager and Communications Manager work with the OS/2 Presentation Manager.™ With Presentation Manager's graphical interface, you simply point and click with a mouse, and the Communications Manager and Database Manager menus appear onscreen.

Bring host and network resources within reach. With Extended Edition, you can access the documents and files of another system or mainframe located miles away. What's more, you can access many IBM System/370™ host applications right at your workstation and run advanced applications at the same time. That's because the Communications Manager integrates a wide variety of communications and network management capabilities—like the SNA LAN Gateway—in a single system. And it provides such basic OS/2 benefits as multitasking capability, large memory access, and enhanced ease of use.

What you gain from all this is the flexibility to keep pace with changing needs—and a path to higher productivity, too.



The Query Manager feature of OS/2 Database Manager simplifies SQL for nonexpert users.

IBM

No longer do you have to wait for one communication session to end before starting another. With the Communications Manager, you can support several types of sessions at once—with each session in its own Presentation Manager window. You can also "talk" with other systems by using a wide range of communications technologies and protocols, including Synchronous Data Link Control (SDLC), Distributed Function Terminal (DFT) mode, Advanced Program-to-Program Communications (APPC), X.25 packet switching, and more. And thanks to the enhanced networking support of OS/2 EE 1.2, you have connectivity with 4- and 16Mbit-per-second IBM Token-Ring Networks, IBM PC Networks and IBM's new ETHERAND™ LAN, which provides IEEE 802.3 and DIX Version 2 Ethernet™ support.

For example, you can log on to a System/370 host using 3270 terminal emulation protocols, run a cooperative processing application in an APPC session with an AS/400,™ and receive a file transfer from another workstation—all at the same time.

These concurrent communications can now be run more easily than ever because of Presentation Manager. Simply log on to each host through a Presentation Manager window—and switch back and forth among hosts according to your needs.

In addition to concurrent communications, Communications Manager offers other functions that enhance your capabilities and help work flow smoothly in your connected environment. These include file transfer, network and system management support, functions for gathering and processing problem-determination data, 3270 and Async terminal emulation, and a 5250 Workstation Feature (WSF).

Extended Edition 1.2 also includes enhanced LAN Requester support. Designed to work with the IBM OS/2 LAN Server Version 1.2, the LAN Requester allows each workstation running Extended Edition to access LAN resources with ease. So you don't need to install special LAN operating system software for each LAN user.

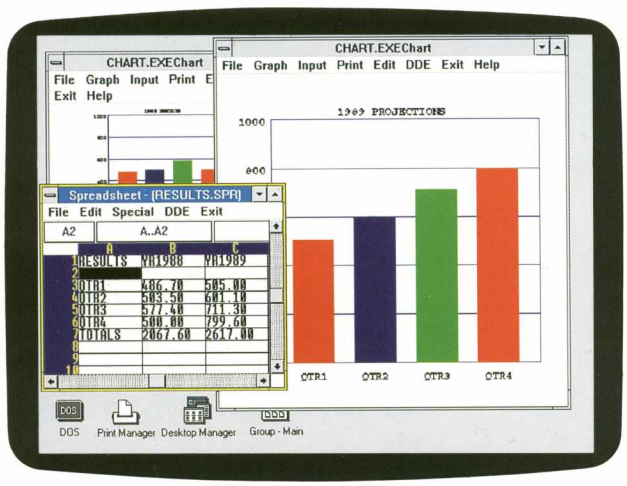
Build a comprehensive data base. When you use Extended Edition, you get another plus: support for a relational data base. Through Database Manager, you can work with or even create a relational data base that is consistent with other IBM relational data base software—DB2,™ SQL™/DS, QMF™ and OS/400™ Database Manager.

Like this software, Database Manager operates under the IBM-developed Structured Query Language (SQL). If you're already familiar with this language, you can use SQL commands to query the data base. Or you can follow a prompted interface to create a data base, retrieve data and generate and customize reports.

The Database Manager can also import host data. And since it follows an architecture similar to that of IBM host data base products, Database Manager can be more closely integrated with IBM host data bases.

Through its Remote Data Services feature, in fact, Database Manager allows multiple workstations to access a single OS/2 data base on a LAN. It can even access data bases residing on other workstations on the LAN—transparently. And because Database Manager now includes Referential Integrity, it validates changes to related data automatically.

There's more. The Query Manager component of the Database Manager allows you to create your own panels, menus and procedures. And, for the nonexpert user, the Query Manager simplifies complicated tasks. You can also use the Database Manager's SQL programming interface and OS/2 programming languages to build a complete, interactive data base application.



OS/2 Presentation Manager allows you to display multiple applications concurrently—and move data among them.

Make the move to software and hardware consistency. Operating System/2 Extended Edition 1.2 implements elements of IBM's Systems Application Architecture™ (SAA™) and SAA's Common User Access (CUA) feature. Designed to bring together IBM System/370, AS/400 and Personal System/2® environments, SAA provides consistent interfaces for communications and programming—even for end users. And the CUA feature furnishes common guidelines for developing easy-to-use OS/2 Presentation Manager applications.

Have up to 16Mb of real memory available on demand. With OS/2's large memory addressability, you can handle many large, complex applications concurrently. And you can keep your most frequently used applications in memory at the same time. So if you're in the middle of creating a pie chart with a graphing program, for example, and need to quickly check a figure in the chart, you can query the data base that has the information. While you work with one application, other applications can continue to execute concurrently. And, whenever you like, you can easily switch among various applications and continue working.

View many windows at one time. When you're working with several programs, you don't have to stop and save one before retrieving another. With OS/2 Presentation Manager, you can create as many windows as you need, in any size, and view them concurrently—even transfer data among them.

Besides allowing applications to run in a windowing environment, Presentation Manager provides wide-ranging programming interfaces, ease-of-use facilities, a set of powerful graphics functions, and support for all-points-addressable displays, printers, pointing devices and plotters. So whether you're calling for a file or creating a complex application, Presentation Manager streamlines your work by supporting and simplifying the way you interact with your system.

Keep working with DOS software. Because OS/2 Extended Edition 1.2 has a built-in DOS application environment, you can continue to run many of the PC programs you currently use. You can, for example, keep running the accounting

or word processing programs used by the rest of the company.

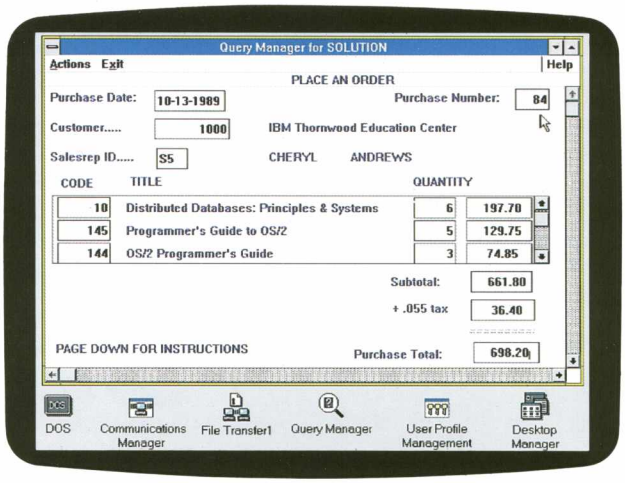
Develop powerful applications for your specific needs. OS/2 Extended Edition incorporates a set of consistent programming interfaces to help increase productivity and simplify the process of writing new applications. Since the programming interfaces contain hundreds of functions, development time is sharply reduced.

Programming interfaces provided with Extended Edition 1.2 include:

- High-level dialog interface
- Database Application Remote Interface—to help programmers develop applications that split processing between data base servers and requesters
- Query Manager Callable Interface—to allow other applications to use the interactive functions of Query Manager
- User control interface for Presentation Manager graphics
- Database Manager SQL Application Programming Interface—for high-level data definition and manipulation in data base applications
- Database Manager Precompiler Application Programming Interface—to facilitate the use of Database Manager by program language developers
- Advanced Program-to-Program Communications Programming Interface—for peer-to-peer interaction and communication with a variety of IBM systems
- Server-Requester Programming Interface (SRPI)—for communications-independent requester program calls to a server program
- Asynchronous Communications Device Interface (ACDI)—for exchange of data among applications over asynchronous communications links
- Emulator High Level Language Application Programming Interface (EHLLAPI)—for simplification of existing 3270 and 5250 host applications via programmed operation functions
- IBM NETBIOS and IEEE 802.2 Data Link Control programming interface—for communicating across LANs
- LAN API—for interprocess communications, network management, security services and resource sharing
- Video output interface—for simple text display
- SNA LU0 support—for conventional Logical Unit Applications (LUAs) and file transfers

Highlights

IBM Operating System/2 Extended Edition 1.2 brings many important features to your environment.



With OS/2 Database Manager, you can customize your data base for a variety of specific applications, including order entry.

IBM Operating System/2 at a glance

	Standard Edition 1.2	Extended Edition 1.2
Addressable memory	16Mb	16Mb
Multitasking	Concurrent processing; fast, easy switching among applications	
Enhanced file support	Files and partitions of up to 2 gigabytes using the optional High Performance File System	
Presentation Manager	Built-in windowing, graphics and clipboard functions; Common User Access	
Database Manager		Relational data base with query management, report generation and additional functions
Communications Manager		Support for a variety of multiple, concurrent communications sessions
LAN Requester*		Support for LAN API and access to LAN Server
Ease-of-use facilities	Online tutorial, contextual Help, onscreen messages, Desktop Manager, File Manager, Print Manager	
Languages supported	IBM COBOL/2,™ FORTRAN/2,™ C/2,™ Macro Assembler/2,™ Pascal Compiler/2,™ BASIC Compiler/2™	
Warranty and service	Three-month warranty coverage and a 12-month plan; an interactive, electronic service support facility is available to OS/2 registered service coordinators without charge	

**Supported by OS/2 LAN Server 1.2.*

SNA LAN Gateway enables a workstation to support host access for up to 254 link stations on the IBM Token-Ring and PC Networks.

Packet-switching support provides access to low-cost X.25 links to remote systems.

ETHERAND LAN support provides connections to Ethernet and IEEE 802.3 networks.

5250 Workstation Feature allows you to run up to five terminal or printer sessions with the AS/400 and System/36.™

Clipboard capability is designed to make it easy to cut and paste data between multiple 3270 sessions and copy data from ASCII sessions.

3270 connectivity furnishes access to host graphics and directs printing to either S/370 or workstation printers.[1]

Emulator High Level Language Application Programming Interface simplifies complex tasks in workstation-to-host communications in 3270 and 5250 WSF environments.

Advanced Program-to-Program Communications support opens the door to distributed applications, so your workstation can team up with other IBM systems to tackle complex tasks.

ASCII terminal emulation permits your workstation to act as an IBM 3101 or DEC®/VT100® terminal and supports asynchronous file transfer.

Enhanced Connectivity Facilities provide a platform for cooperative processing in the 3270 environment.

Relational Database Structured Query Language support in Database Manager includes the powerful high-level data definition and manipulation language used in IBM host data base programs, such as DB2.

Remote Data Services allow workstation users to have access to data located in relational data bases on other workstations via IBM Token-Ring Networks, PC Networks or ETHERAND LANs—as if the data base were local.

Database Services include storage access methods, SQL statement processing, transaction management, recovery services and concurrency control.

DOS Database Requester allows your DOS workstations to access information through Extended Edition's Database Manager.

Query Manager helps less experienced data base users develop data entry/retrieval applications.

Procedures Language 2/REXX, integrated into OS/2 EE, permits you to write command procedures and macros for OS/2 programs. It even lets you create programs that use SQL statements and are capable of accessing stored data base information via the Query Manager and the Database Manager.

SQL Query Management Facility (SQLQMF) imports data from the IBM DB2 and SQL/DS host relational data bases with QMF installed.

Data conversion utilities exchange/import data with other applications, such as Lotus® spreadsheets and IBM DisplayWrite™ 5/2.

Programming enhancements provided in the Operating System/2 Tools and Information Version 1.2 assist developers in creating applications with interactive, menu-based features like pull-downs, action bars, scroll bars and pop-up windows.

Desktop Manager gives you an easier way to start and run applications, including many DOS programs. It also simplifies the moving and copying of files—and adding programs to Desktop Manager's menu is just as easy.

File Manager lets you represent files and subdirectories with either icons or text. Its other enhancements include a wider choice of fonts, a more flexible association function, and a new search function.

Direct "drag and drop" file manipulation feature allows you to move, copy or print files conveniently and fast. For example, to move a file within either Desktop or File Manager, you simply drag the file's icon from its current group and drop it where you want it.

High-performance file system supports up to 16 fixed disk partitions, giving you a fast, consistent way to access partitions and files of up to 2 gigabytes.

Consistent integrated presentation programming interface gives you a high degree of device support—and device independence—along with windowing functions, graphics and fonts. The interface also provides PostScript® support for publishing applications.

Consistent application management allows users to run many applications concurrently and view them all on the screen.

Support for 80286, 80386 and i486 architectures ensures that the OS/2 applications you create can run on IBM systems that use any of these processors. The result: You can run OS/2 on a range of hardware platforms and make the most of all of them.

16Mb real memory addressability lets you develop and run very large applications that include bit-mapped graphics, online documentation, large data requirements, and high-level functions. Additional virtual memory is available on demand in the event that multiple operations exceed installed real memory.

Memory management and multitasking capabilities allow you to perform many operations simultaneously so you can use your time efficiently.

DOS compatibility mode allows you to continue using many of your present DOS-based programs. It also lets you start DOS programs within either the Desktop Manager or File Manager and switch quickly between OS/2 and DOS environments.

Dual boot capability offers you the option of booting either OS/2 or DOS from the same fixed disk drive.

Common Programming Interface for Communications (CPI/C) creates a single programming interface for APPC applications (planned enhancement).

What you get

IBM Operating System/2 Extended Edition 1.2 comes on 3.5-inch or 5.25-inch diskettes along with associated publications.

Programming languages

Whether you want to design a spreadsheet with sophisticated graphics or build a model, there's an IBM programming language suited to the task—and supported by OS/2. The range of languages you can work with includes:

- IBM C/2 Version 1.10—the full-function language with new enhancements for the OS/2 Presentation Manager environment
- IBM COBOL/2—for business applications with access to OS/2 functions and support for multiple memory models
- IBM FORTRAN/2 Version 1.02—for scientific and engineering applications in a multitasking environment
- IBM Macro Assembler/2—for improved application performance and concurrent operation of applications
- IBM Pascal Compiler/2—structured programming facilities and extensive data structures to help you create and execute Pascal programs in the OS/2 environment
- IBM BASIC Compiler/2—for writing, testing and running BASIC programs under OS/2

OS/2 Extended Edition includes LAN Requester support, which is designed to work with OS/2 LAN Server 1.2.

IBM COBOL/2, C/2 1.10, FORTRAN/2 1.02, and Macro Assembler/2 can now be used to build easy-to-use graphic applications that run in the Presentation Manager environment.

Options

The IBM Operating System/2 Programming Tools and Information Version 1.2 is available to help boost your productivity in developing applications for the OS/2 environment. Highlights include:

- Graphics and windowing tools such as a font editor, an icon editor, a dialog editor, and a resource compiler
- A programmer's guide
- Facilities for creating dynamic link libraries and family applications
- Programming aids for IBM Macro Assembler/2, C/2 1.10, COBOL/2 and FORTRAN/2 1.02
- Message preparation utilities
- Sample programs illustrating useful programming techniques
- Dialog Manager, including programming aids and a Dialog Tag Language compiler

Also available are IBM Operating System/2 Technical Reference Guides.

Warranty/Service

IBM Operating System/2 Extended Edition 1.2 is developed to meet IBM's high standards of quality and reliability.

OS/2 Extended Edition 1.2 is backed by a warranty and service plan. The three-month warranty starts when the product is acquired and covers both the media and the program. The no-charge service plan is available for up to 12 months after general availability.

™ *Operating System/2, Presentation Manager, System/370, ETHERAND, AS/400, DB2, SQL, QMF, OS/400, Systems Application Architecture, SAA, COBOL/2, FORTRAN/2, C/2, Macro Assembler/2, Pascal Compiler/2, BASIC Compiler/2, System/36, DisplayWrite, System/38 and Series/1 are trademarks of International Business Machines Corporation. 80386 and i486 are trademarks of Intel Corporation. Ethernet is a trademark of Xerox Corporation.*

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IBM Operating System/2 Extended Edition 1.2 features

Feature	Function	Benefit
LAN Requester	Provides access to resources provided by IBM OS/2 LAN Server 1.2	Transparent access to LAN resources, including disk space, printers, processing capabilities and serially attached devices
Communications Manager	Puts comprehensive communications capability in a single computer	Flexibility to receive and send data through multiple concurrent communications over a wide range of connections
Database Manager	Offers facilities for developing and working with a relational data base; also provides a common environment across host systems and personal computers	Greater convenience in designing, creating and accessing a data base; application portability across systems
Presentation Manager windowing	Provides ease of use through Common User Access, a consistent windowing interface; multiple concurrent applications through onscreen windows; comprehensive help information and system messages	Improved productivity; greater transfer of skills; quicker learning for novices; simplified operations for beginners and experienced users; easy switching between applications
Desktop Manager	Represents files as icons or text and allows easy movement between OS/2 and DOS environments	Increased user efficiency and accuracy and simplified procedures
User profile management	Allows the same user ID and password to access Database Manager and OS/2 LAN Server	Improved security; enhanced productivity, since users need only one password to access OS/2 Extended Edition resources
High-level programming interface	Provides application developers with a consistent interface across all versions of OS/2. The Presentation Manager programming interface implements elements of SAA and includes rich functions for windowing, graphics, fonts, clipboard and device-independent I/O support	Consistent platform for application development across versions of OS/2; foundation for applications on other IBM operating systems and hardware through Common User Access; capability for programmers to more easily extend programs by concentrating on specific functions
Dual boot	Permits booting of either OS/2 or DOS from the same fixed disk	Alternative method for users of booting DOS applications within their OS/2 environment
File Manager	Provides file access with mouse or keyboard through graphical interface	Elimination of complex commands; speeds file access and manipulation
Graphics support	Allows Presentation Manager-based applications to create and alter bit-mapped or vector graphics onscreen	Easily available graphics for all applications
Clipboard	Enables cut-and-paste between Presentation Manager-based programs	Capability to move text and graphics among such applications as spreadsheets, word processors and data bases
Information Presentation Facility	Lets users without programming skills set up Help panels	Help panels tailored by information developers for maximum user productivity; Help panels easily incorporated into applications by programmers
16Mb addressable random access memory support	Enables developers/users to take full advantage of memory beyond 640Kb for applications and data	Capability to use functionally rich applications, such as spreadsheets and advanced word processing programs, that can process large amounts of data
Concurrent processing of multiple applications	Allows multitasking and fast, easy switching among OS/2 applications and/or DOS applications	Increased productivity and user convenience
DOS compatibility	Allows users to run most of their existing DOS applications; provides compatible file and command systems	Smooth shift between OS/2 and DOS when users are working within Desktop Manager or File Manager; interchangeable DOS and OS/2 files
Warranty and service	Provide 3-month warranty coverage and a 12-month service plan	Protection for investment in OS/2; increased reliability, availability and serviceability
Dialog Manager	Provides a high-level interface to OS/2 Presentation Manager in the OS/2 Tools and Information Version 1.2	Development of applications with easy-to-use, menu-based features
High-performance file system	Supports 16 partitions and files of up to 2 gigabytes for faster file access and simplified management	Improved fixed-disk performance; compatibility with existing files

IBM Operating System/2 Extended Edition 1.2 connectivity summary

Supported system	Interface or emulation	Protocol	File transfer	Link[2]
IBM System/370 architecture	APPC	LU6.2		SDLC (3720, 3725, 3705, 3726, 3745 and 9370 Integrated Controller)
				Token-Ring (3720, 3725, 3726, 3745 and 9370 Integrated Controller, 8232 LAN Channel Station)[3]
				Token-Ring using 3174's 3270 Gateway Feature (#3025) for PU2.0[3]
				Token-Ring, PC Network or ETHERAND LAN using OS/2 SNA LAN Gateway
				X.25
	LUA	LU0,1,2,3		All above links except ETHERAND
	3270 (including EHLLAPI)	LU2	3270-PC File Transfer Program	DFT via 3174/3274 (to SDLC, BSC or channel) and 9370 Workstation Program Controller
	3270 Print	LU1,3		SDLC (3720, 3725, 3705, 3726, 3745 and 9370 Integrated Controller)
	SRPI	LU2		Token-Ring (3720, 3725, 3726, 3745 and 9370 Integrated Controller)[3]
				Token-Ring using 3174's 3270 Gateway Feature (#3025) for PU2.0[3]
				Token-Ring, PC Network or ETHERAND LAN using OS/2 SNA LAN Gateway
				X.25
	3101, VT100	Async	3270-PC File Transfer Program	Async[4]
IBM Personal System/2 and IBM PC	APPC	LU6.2		SDLC, Token-Ring[3], PC Network, ETHERAND LAN
				X.25
	ACDI	Async	XMODEM, ASCII	Async
	NETBIOS IEEE 802.2	NETBIOS IEEE 802.2		Token-Ring, PC Network or ETHERAND LAN
IBM AS/400 and IBM System/36	APPC	LU6.2		SDLC, Token-Ring, Twinaxial (AS/400 only, including 5394 Remote Control Unit)
	5250 WSF (including EHLLAPI)	LU6.2	AS/400 PC Support	
				X.25
IBM System/38™ and IBM System/88	APPC	LU6.2		SDLC, X.25 (System/38 only)
IBM Series/1™	APPC	LU6.2		SDLC, Token-Ring
	3101	Async		Async
IBM RT®	APPC	LU6.2		SDLC, X.25
	VT100		XMODEM	Async
Other hosts[5] or workstations[5]	3101,[6] VT100		XMODEM, ASCII[7]	Async
	X.25 API	X.25 (non-SNA)		X.25
	IEEE 802.2	IEEE 802.2		ETHERAND LAN

[1] *When used with GDDM-OS/2 Link in S/370 environments.*
[2] *The OS/2 Extended Edition Communications Manager supports combinations of these links subject to the limitations imposed by installed adapters, memory size and processor capacity. All supported SNA links are sharable by applications which may use up to ten 3270 display sessions (via SDLC or Token-Ring link with up to five, and DFT link with up to five) per workstation. Multiple concurrent SNA LU6.2 sessions per logical unit are supported over remote SDLC or local Token-Ring LAN links. Asynchronous links are serially usable.*
[3] *Both 4Mbit-per-second and 16Mbit-per-second IBM Token-Ring Networks are supported.*
[4] *Asynchronous users requiring SNA support must use a protocol converter on the link.*
[5] *Appropriately programmed.*
[6] *Character mode.*
[7] *Sending an ASCII text file to another system.*

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